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the station. I feel that could we have stayed one day longer we should have been able to have seen these nestlings launched upon the world. However, it was of value to know that their departure differed from that of most birds in that they returned to the nest, so many nestlings never going back when once they have left it.

*Los Angeles, California.*

## THE CALIFORNIA DISTRIBUTION OF THE ROADRUNNER (*GEOCOCCYX CALIFORNIANUS*)

BY JOSEPH GRINNELL

THE extremely limited powers of flight of the roadrunner are partly compensated for by its pedestrian capabilities. So that the range of territory possible to the individual roadrunner is doubtless much greater than one might at first suspect.

Yet I consider this species to be about as permanently "resident" as any bird we have. There may be a slight downward displacement on steep mountain sides in winter. But even if this is homologous to migration the movement must be so limited that we can safely ignore it in a distributional study. We can therefore establish its breeding range as practically coincident with its record area, irrespective of the season of observation.

On the accompanying map, I have plotted all the definite stations of occurrence on record in available ornithological literature. Many of the records pertain to counties or other extended areas. For example: "thruout the region;" "all along the Colorado River;" "all along the coast from Morro to Carpenteria," etc. In such cases I have not set down any single station; but the region indicated is of course included in the shaded area on the map. Altho this shaded area may cover some small tracts where the roadrunner does not occur, such as timberlands, swamps and alkali flats, I believe it fairly indicative of the roadrunner's California range.

The species is shy, and may not be seen for days in a region where it is known to be common. There is a sure means of detecting its presence, however, wanting among other birds; and this is the characteristic foot-prints in any soft ground, the dustier the plainer. I have seen these unmistakable tracks (two toes forwards and two backwards) during wagon trips over many parts of southern California. They are all that is necessary to establish the presence of the roadrunner.

The species is most abundant in the San Diegan District (faunal area). It is none the less characteristic thruout the desert regions of southeastern California, tho not so numerous. Its numbers become still less towards the northern limits of its range. It extends sparingly a little ways into the humid coast belt of central California. Mailliard records it as very sparingly resident in Marin County (CONDOR II, May 1900, p. 63); and there is one record even beyond that, at Sebastopol in Sonoma County (Belding, Land Bds. Pac. Dist., 1890, p. 56). This is the northernmost in the coast belt. But in the interior the roadrunner occurs along the foothills at each side of the Sacramento Valley nearly to latitude 41 degrees, this being the



DISTRIBUTION IN CALIFORNIA OF THE ROADRUNNER (*Geococcyx californianus*); BLACK SPOTS INDICATE ACTUAL RECORD-STATIONS

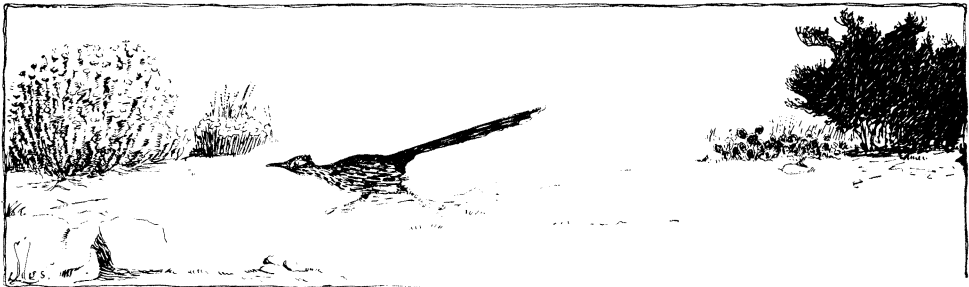
northermost occurrence of the species anywhere in the United States. The three actual northermost stations, all in Shasta County, are: Igo (Belding, Land Bds. Pac. Dist., 1890, p. 56), Fort Reading (Newberry, Pac. R. R. Rep. VI, 1857, p. 91), and Copper City, ten miles up Pitt River (Townsend, Proc. U. S. N. M. X, 1887, p. 204).

It seems that the low-lying, and often swampy central portions of the San Joaquin and Sacramento Valleys are not inhabited by the roadrunner; at least I cannot find any records for that region. East of the Sierras the species occurs north in the Owens Valley to Big Pine (Van Denburgh, Proc. Ac. Nat. Sc. Phila., April 1898, p. 209).

I am quite sure that the roadrunner does not now occur on any of the islands off the California Coast. Cooper recorded it from Santa Catalina Island (Proc. Cal. Ac. Sc. IV, Feb. 1870, p. 77); but neither myself nor any of the other late visitors that I know of have found it there.

The roadrunner in its distribution seems to follow very closely the limits of the Upper and Lower Sonoran Zones (see map of "Isothermic Areas" in Pac. Coast Avif. No. 3), especially in their arid and semiarid portions. I have found it in the San Bernardino Mountains up to above 6000 feet altitude, but this was on hot slopes where the Upper Sonoran Zone, as indicated by the flora, rises even higher.

*Pasadena, California.*



## STRAY NOTES FROM THE FLATHEAD WOODS

BY P. M. SILLOWAY

**J**UNE 5, 1906.—Today for the first time I heard the singing of the white-crowned sparrow (*Zonotrichia leucophrys*). The songster was sitting in a tall dead pine tree, about midway up on a bare branch, and the song rang out beautifully clear and bell-like, as no other sparrow-song heard in this region. For a moment I felt all the thrill of a new sensation, the charm of a new voice in the woodland chorus. Again and again it rang out, a repeated ripple of plaintive wildwood melody. Finally I annotated it like this: *Wir, dee-dle dee, dee dee*. The first syllable of the song is long drawn out, and the "dee-dle dee" following is remarkably sweet and liquid, vibrant and tinkling with mellowest silvery tone. The closing syllables are more hurried and are obscured.